

WHAT IS CLAIMED IS:

1. A method for manufacturing a membrane electrode assembly for a solid polymer type fuel cell comprising:

5 a process for forming an intermediate lamination layer body by laminating a catalyst electrode layer formed with a mixture including electrolyte polymer having the ion conductivity and a conductive miniature body including a catalyst on an electrolyte membrane including an ion conductivity;

10 a process for hot pressing for forming the membrane electrode assembly to unify the intermediate lamination layer body and porous gas diffusion layers positioned on both sides on the intermediate lamination layer body in a thickness direction; wherein

15 the intermediate lamination layer body is heat treated by maintaining heating at a temperature range equal to or higher than a glass-transition temperature of the electrolyte polymer included in the catalyst electrode layer and equal to or lower than thermal decomposition temperature before the hot pressing process under a condition that the gas diffusion layers are not laminating on the intermediate lamination layer body.

20 2. A method for manufacturing a membrane electrode assembly for a solid polymer type fuel cell according to claim 1, wherein the heat treatment is performed in a heat treatment oven either at an inactive ambient or at an atmosphere.

25 3. A method for manufacturing a membrane electrode assembly for a solid polymer type fuel cell according to claim 1, wherein the heat treatment is performed at a state that a pressure is not applied to the intermediate lamination layer body in a thickness direction.

30 4. A method for manufacturing a membrane electrode assembly for a solid polymer type fuel cell according to claim 1, wherein a time for heat treatment is predetermined longer than a time for the hot pressing.

5. A method for manufacturing a membrane electrode assembly for a solid polymer type fuel cell comprising:

a process for forming an intermediate lamination layer body by laminating a catalyst electrode layer formed with a mixture of an electrolyte polymer having the ion conductivity and a conductive miniature body including a catalyst on a porous gas diffusion layer;

- 5 a process for hot pressing for forming a membrane electrode assembly by unifying an electrolyte membrane having the ion conductivity and the intermediate lamination layer bodies arranged both sides of the electrolyte membrane; wherein the intermediate lamination layer body is heat treated by maintaining heating at a temperature range equal to or higher than glass-transition temperature of the
10 electrolyte polymer included in the catalyst electrode layer and equal to or lower than the thermal decomposition temperature before the process of hot pressing under a condition that the electrolyte membrane is not laminated on the intermediate lamination layer body.

- 15 6. A method for manufacturing a membrane electrode assembly for a solid polymer type fuel cell according to claim 5, wherein the heat treatment is performed in a heat treatment oven either at an inactive ambient or at an atmosphere.

- 20 7. A method for manufacturing a membrane electrode assembly for a solid polymer type fuel cell according to claim 5, wherein the heat treatment is performed at a state that a pressure is not applied to the intermediate lamination layer body in a thickness direction.

- 25 8. A method for manufacturing a membrane electrode assembly for a solid polymer type fuel cell according to claim 5, wherein a time for heat treatment is predetermined longer than a time for the hot pressing.